UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,387	09/10/2003	Hidehisa Makita	03500.017134	2273

5514 7590 05/06/2004

FITZPATRICK CELLA HARPER & SCINTO
30 ROCKEFELLER PLAZA
NEW YORK, NY 10112

EXAMINER	
DIAMOND, ALAN D	

ART UNIT	PAPER NUMBER
1753	

DATE MAILED: 05/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/658,387	MAKITA ET AL.
	Examiner	Art Unit
	Alan Diamond	1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 September 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *12162003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. Figures 2A, 2B, 3, and 4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claim 10 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 10 does not further limit claim 1 because the at least one side inherently has a width. Thus, specifying that the one side has a predetermined width does not further limit what is already inherent in claim 1.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The line numbers referred to below are claim line numbers, not page line numbers.

Claim 1 is indefinite because "said first support member" at lines 9-10 lacks positive antecedent support in claim 1 itself. It is suggested that the term "first support" at line 3 be changed to "first support member". The same applies to dependent claims 2-12.

Claim 4 is indefinite because it is not clear which of the support members is being referred to by the term "said support member" at line 3.

In claim 10, at line 2, the term "predetermined width" is indefinite because it is subjective.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 2, 4, and 9-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Solow, U.S. Patent 2,823,245.

In Solow's Figure 1, the spacer (18) reads on the instant first support; the solar cell (11) on the right side that is directly supported by spacer (18) reads on the instant plate-shaped member having a solar cell; and the solar cell (11) in the middle reads on the instant second support member (see also col. 1, line 55 through col. 2, line 51). The

solar cell (11) at the left (which is directly in contact with spacer (17)) reads on the second plate-shaped member in claim 2. Note that each solar cell (11) has a conducting base (12) that is a plate-shaped member. Alternatively, the middle solar cell (11) reads on the instant plate-shaped member having a solar cell, the right solar cell (11) reads on the instant first support, and the left solar cell (11) reads on the instant second support. When such is the case, the conditions of claim 4 are met since each of the solar cells are made of the same material. Also, when such is the case, the conditions of claim 9 are met since the spacer (18) would then read on the insulating member in claim 9. Since Solow teaches the limitations of the instant claims, the reference is deemed to be anticipatory.

7. Claims 1-4 and 10-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Ressler, U.S. Patent Application Publication 2004/0000334. Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

As seen in the upper row in Figure 10, Ressler's photovoltaic module is connected to a roofing tile (104) on one side and another photovoltaic module on the other side (see also paragraph 0073). The roofing tile (104), which can be made from concrete, reads on the instant first support (see paragraph 0040). Said another photovoltaic module on the other side reads on the instant second support. Alternatively, when a photovoltaic module is connected on each side to another photovoltaic module, the photovoltaic modules on the two sides read on the instant first

and second support members. Since Ressler teaches the limitations of the instant claims, the reference is deemed to be anticipatory.

8. If a copy of a provisional application listed on the bottom portion of the accompanying Notice of References Cited (PTO-892) form is not included with this Office action and the PTO-892 has been annotated to indicate that the copy was not readily available, it is because the copy could not be readily obtained when the Office action was mailed. Should applicant desire a copy of such a provisional application, applicant should promptly request the copy from the Office of Public Records (OPR) in accordance with 37 CFR 1.14(a)(1)(iv), paying the required fee under 37 CFR 1.19(b)(1). If a copy is ordered from OPR, the shortened statutory period for reply to this Office action will not be reset under MPEP § 710.06 unless applicant can demonstrate a substantial delay by the Office in fulfilling the order for the copy of the provisional application. Where the applicant has been notified on the PTO-892 that a copy of the provisional application is not readily available, the provision of MPEP § 707.05(a) that a copy of the cited reference will be automatically furnished without charge does not apply.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 1-4 and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Solow, U.S. Patent 2,823,245, in view of Arthur et al, U.S. Patent 5,415,700.

In Solow's Figure 1, the spacer (18) reads on the instant first support; the solar cell (11) on the right side that is directly supported by spacer (18) reads on the instant plate-shaped member having a solar cell; and the solar cell (11) in the middle reads on the instant second support member (see also col. 1, line 55 through col. 2, line 51). The solar cell (11) at the left (which is directly in contact with spacer (17)) reads on the second plate-shaped member in claim 2. Note that each solar cell (11) has a conducting base (12) that is a plate-shaped member. Alternatively, the middle solar cell (11) reads on the instant plate-shaped member having a solar cell, the right solar cell (11) reads on the instant first support, and the left solar cell (11) reads on the instant second support. When such is the case, the conditions of claim 4 are met since each of the solar cells are made of the same material. Also, when such is the case, the conditions of claim 9 are met since the spacer (18) would then read on the insulating member in claim 9. Solow teaches the limitations of the instant claims other than the difference which is discussed below.

Solow does not specifically teach that its solar cells are made from concrete. Note that instant claim 3 requires that the plate-shaped member is cast from concrete material. Arthur et al teaches a concrete solar cell that provides the advantages of being inexpensive and robust (see abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the concrete

solar cells of Arthur et al for the solar cells in Solow's device because Arthur et al's concrete solar cells provide the advantage of being inexpensive and robust.

With respect to claim 12, the use of a power conditioner with Solow's device would have been within the skill of an artisan to as to obtain the proper current and/or voltage from the device.

11. Claims 1, 2, 4, and 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Solow, U.S. Patent 2,823,245, in view of Japanese Patent 55-68681 A, herein referred to as JP '681

In Solow's Figure 1, the spacer (18) reads on the instant first support; the solar cell (11) on the right side that is directly supported by spacer (18) reads on the instant plate-shaped member having a solar cell; and the solar cell (11) in the middle reads on the instant second support member (see also col. 1, line 55 through col. 2, line 51). The solar cell (11) at the left (which is directly in contact with spacer (17)) reads on the second plate-shaped member in claim 2. Note that each solar cell (11) has a conducting base (12) that is a plate-shaped member. Alternatively, the middle solar cell (11) reads on the instant plate-shaped member having a solar cell, the right solar cell (11) reads on the instant first support, and the left solar cell (11) reads on the instant second support. When such is the case, the conditions of claim 4 are met since each of the solar cells are made of the same material. Also, when such is the case, the conditions of claim 9 are met since the spacer (18) would then read on the insulating member in claim 9. Solow teaches the limitations of the instant claims other than the difference which is discussed below.

Solow does not specifically teach that its solar cells are composed of amorphous silicon formed on a stainless steel substrate. JP '681 teaches an amorphous silicon solar cell formed on a stainless steel substrate (see the attached English abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used an amorphous silicon solar cell on a stainless steel substrate for each of the solar cells in Solow's device because such a solar cell is conventional in the art, as shown by JP '681.

With respect to claim 12, the use of a power conditioner with Solow's device would have been within the skill of an artisan to as to obtain the proper current and/or voltage from the device.

12. Claims 1, 2, 4-7, and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Solow, U.S. Patent 2,823,245, in view of Iwasaki et al, U.S. Patent Application Publication US 2004/0055894.

In Solow's Figure 1, the spacer (18) reads on the instant first support; the solar cell (11) on the right side that is directly supported by spacer (18) reads on the instant plate-shaped member having a solar cell; and the solar cell (11) in the middle reads on the instant second support member (see also col. 1, line 55 through col. 2, line 51). The solar cell (11) at the left (which is directly in contact with spacer (17)) reads on the second plate-shaped member in claim 2. Note that each solar cell (11) has a conducting base (12) that is a plate-shaped member. Alternatively, the middle solar cell (11) reads on the instant plate-shaped member having a solar cell, the right solar cell (11) reads on the instant first support, and the left solar cell (11) reads on the instant

second support. When such is the case, the conditions of claim 4 are met since each of the solar cells are made of the same material. Also, when such is the case, the conditions of claim 9 are met since the spacer (18) would then read on the insulating member in claim 9. Solow teaches the limitations of the instant claims other than the difference which is discussed below.

Solow does not specifically teach that said conducting base (12) is fixed to the solar cell using an adhesive. However, such a feature is conventional in the art. In particular, Iwasaki et al teaches bonding an electrically conductive substrate to a solar cell using an electrically conductive adhesive (see paragraph 0208). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have bonded Solow's conducing base (12) to the solar cell using an electrically conductive adhesive because it is conventional in the art to do so, as shown by Iwasaki et al.

With respect to claim 12, the use of a power conditioner with Solow's device would have been within the skill of an artisan to as to obtain the proper current and/or voltage from the device.

13. Claims 1-4 and 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ressler, U.S. Patent Application Publication 2004/0000334, in view of JP 55-68681, herein referred to as JP '681. Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

As seen in the upper row in Figure 10, Ressler's photovoltaic module is connected to a roofing tile (104) on one side and another photovoltaic module on the

other side (see also paragraph 0073). The roofing tile (104), which can be made from concrete, reads on the instant first support (see paragraph 0040). Said another photovoltaic module on the other side reads on the instant second support. Alternatively, when a photovoltaic module is connected on each side to another photovoltaic module, the photovoltaic modules on the two sides read on the instant first and second support members. Ressler teaches the limitations of the instant claims other than the difference which is discussed below.

Ressler does not specifically teach that its solar cell are composed of amorphous silicon formed on a stainless steel substrate. JP '681 teaches an amorphous silicon solar cell formed on a stainless steel substrate (see the attached English abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used an amorphous silicon solar cell on a stainless steel substrate for each of the solar cells in Ressler's device because such a solar cell is conventional in the art, as shown by JP '681.

With respect to claim 12, the use of a power conditioner with Ressler's device would have been within the skill of an artisan to as to obtain the proper current and/or voltage from the device.

14. Claims 1-7 and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ressler, U.S. Patent Application Publication 2004/0000334, in view of Iwasaki et al, U.S. Patent Application Publication 2004/0055894. Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

As seen in the upper row in Figure 10, Ressler's photovoltaic module is connected to a roofing tile (104) on one side and another photovoltaic module on the other side (see also paragraph 0073). The roofing tile (104), which can be made from concrete, reads on the instant first support (see paragraph 0040). Said another photovoltaic module on the other side reads on the instant second support. Alternatively, when a photovoltaic module is connected on each side to another photovoltaic module, the photovoltaic modules on the two sides read on the instant first and second support members. Ressler teaches the limitations of the instant claims other than the difference which is discussed below.

Ressler does not specifically teach that an electrically conductive base of its solar cells are fixed to the solar cells using an adhesive. However, such a feature is conventional in the art. In particular, Iwasaki et al teaches bonding an electrically conductive substrate to a solar cell using an electrically conductive adhesive (see paragraph 0208). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have bonded an electrically conductive base to Ressler's solar cells using an electrically conductive adhesive because it is conventional in the art to do so, as shown by Iwasaki et al.

With respect to claim 12, the use of a power conditioner with Ressler's device would have been within the skill of an artisan to as to obtain the proper current and/or voltage from the device.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent documents 3,116,171, 3,769,091, 5,505,788, 6,046,399, 6,342,669 and 2004/0007260, and JP 62-42469 are hereby made of record.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan Diamond whose telephone number is 571-272-1338. The examiner can normally be reached on Monday through Friday, 5:30 a.m. to 2:00 p.m. ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Alan Diamond
Primary Examiner
Art Unit 1753

Alan Diamond
April 22, 2004